

Listing of the Claims.

The status of the claims follows:

Claim 1. (Currently amended) A filter system for adsorbing contaminants from a molten carbonate fuel cell exhaust stream comprising

a filter substrate coated with a material, wherein the material comprises

an inorganic adsorbent secured to the filter substrate by an inorganic binder, and

an acidic material coated onto the filter substrate, wherein the acidic material comprises ~~an~~ a non-water soluble inorganic acid.

Claim 2. (Original) The filter system of Claim 1 wherein the composition of the filter substrate is selected from a group of materials consisting of ceramic, alumina, titania, zirconia, boria, corundum, silica, magnesia, silica-zirconia, titania-zirconia, titania-silica, silica-alumina, silicon carbides, cordierite, mullite, and metallic filters, such as stainless steel, iron chromium alloy and other metallic alloy filters and mixtures and combinations thereof.

Claim 3. (Original) The filter system of Claim 1 wherein the filter substrate comprises a metallic filter.

Claim 4. (Original) The filter system of Claim 1 wherein the inorganic adsorbent is selected from the group consisting of alumina, silica, titania, titania-silica, silica-alumina, zirconia silica-zirconia, ceria, and zeolites, either modified

or unmodified.

Claim 5. (Original) The filter system of Claim 1 wherein the inorganic adsorbent comprises a high surface area material selected from the group consisting of alumina, silica, titania, zirconia, ceria, titania-silica, silica-alumina, silica-zirconia and zeolites.

Claim 6. (Original) The filter system of Claim 1 wherein the inorganic adsorbent comprises a high surface area alumina with a surface area greater than about 100 m²/g.

Claim 7. (Original) The filter system of Claim 1 wherein the inorganic binder for binding the inorganic adsorbent to the filter substrate is selected from the group consisting of sols of alumina, silica, zirconia, ceria, titania, boehmite and aluminum nitrate, and blends of two or more different binders.

Claim 8. (Original) The filter system of Claim 1 wherein the filter substrate comprises a stainless steel screen and the inorganic binder comprises ceria.

Claim 9. (Canceled)

Claim 10. (Original) The filter system of Claim 1 wherein the acidic material comprises a non-water soluble inorganic acid.

Claim 11. (Currently amended) ~~The filter system of Claim~~
± A filter system for adsorbing contaminants from a molten
carbonate fuel cell exhaust stream comprising
a filter substrate coated with a material, wherein
the material comprises

an inorganic adsorbent secured to the filter substrate by an inorganic binder, and

an acidic material coated onto the filter substrate,
wherein the acidic material comprises heteropolyphosphoric acid.

Claim 12. (Original) The filter system of Claim 1 wherein the inorganic adsorbent comprises about 60 to about 95 percent, the inorganic binder comprises about 5 to about 40 percent and the acidic material comprises about 0.1 to about 20 percent of the material coated on the filter substrate.

Claim 13. (Original) The filter system of Claim 1 wherein the inorganic adsorbent comprises about 80 to about 95 percent, the binder comprises about 1 to about 20 percent and the acidic material comprises about 0.1 to about 5 percent of the material coated on the filter substrate.

Claim 14. (Currently amended) A filter system for adsorbing contaminants from an exhaust system from a molten carbonate fuel cell prior to passage of the exhaust stream through an oxidation catalyst comprising

a filter substrate,

a high surface area inorganic adsorbent secured to the filter substrate by an inorganic binder, and

an inorganic acidic material coated onto the filter substrate, wherein the inorganic acidic material comprises ~~an~~
a non-water soluble inorganic acid.

Claim 15. (Canceled)

Claim 16. (Canceled)

Claim 17. (Original) A process for filtering contaminants which are present in an exhaust stream of a molten carbonate fuel cell comprising

passing a fuel stream through the molten carbonate fuel cell,

passing at least a portion of an exhaust stream containing inorganic contaminants through a filter system, and

filtering the inorganic contaminants from the exhaust stream by use of the filter system, wherein the filter system comprises a filter substrate, an inorganic adsorbent secured to the filter substrate by an inorganic binder and an acidic material coated onto the filter substrate.

Claim 18. (Previously presented) The process of Claim 17 further comprising passing at least a portion of the filtered exhaust stream after passage through the filter system through an oxidation catalyst system.

Claim 19. (Original) An exhaust treatment system for adsorbing contaminants from a molten carbonate fuel cell comprising the filter system of Claim 1 and an oxidation catalyst.

Claim 20. (Original) An exhaust treatment system for adsorbing contaminants from a molten carbonate fuel cell comprising the filter system of Claim 14 and an oxidation catalyst.

Claim 21. (Original) A process for filtering contaminants

which are present in an exhaust stream of a molten carbonate fuel cell comprising

passing a fuel stream through the molten carbonate fuel cell which generates an exhaust stream containing inorganic contaminants,

passing at least a portion of the exhaust stream containing inorganic contaminants through a filter system,

filtering the inorganic contaminants from the exhaust stream by use of the filter system, wherein the filter system comprises a filter substrate, an inorganic adsorbent secured to the filter substrate by an inorganic binder and an acidic material coated onto the filter substrate and

passing the filtered exhaust stream through an oxidation catalyst.

Claim 22. (Currently amended) A process for preparing an exhaust treatment system for filtering exhaust gases from a molten carbonate fuel cell comprising

preparing ~~the a~~ filter system ~~of Claim 1~~ comprising
a filter substrate coated with a material, wherein
the material comprises

an inorganic adsorbent secured to the filter
substrate by an inorganic binder, and

an acidic material coated onto the filter substrate,
wherein the acidic material comprises an inorganic acid,

preparing an oxidation catalyst for fuel cells, and
placing the filter system and the oxidation catalyst

on-line to filter the exhaust gases from the molten carbonate fuel cell.

Claim 23. (Previously presented) A filter system for adsorbing contaminants from a molten carbonate fuel cell exhaust stream consisting essentially of

a filter substrate coated with a material, wherein the material comprises

an inorganic adsorbent secured to the filter substrate by an inorganic binder, and

an acidic material coated onto the filter substrate.

Claim 24. (New) The process of Claim 17 wherein the composition of the filter substrate is selected from a group of materials consisting of ceramic, alumina, titania, zirconia, boria, corundum, silica, magnesia, silica-zirconia, titania-zirconia, titania-silica, silica-alumina, silicon carbides, cordierite, mullite, and metallic filters, such as stainless steel, iron chromium alloy and other metallic alloy filters and mixtures and combinations thereof.

Claim 25. (New) The process of Claim 17 wherein the filter substrate comprises a metallic filter.

Claim 26. (New) The process of Claim 17 wherein the inorganic adsorbent is selected from the group consisting of alumina, silica, titania, titania-silica, silica-alumina, zirconia silica-zirconia, ceria, and zeolites, either modified or unmodified.

Claim 27. (New) The process of Claim 17 wherein the

inorganic adsorbent comprises a high surface area material selected from the group consisting of alumina, silica, titania, zirconia, ceria, titania-silica, silica-alumina, silica-zirconia and zeolites.

Claim 28. (New) The process of Claim 17 wherein the inorganic adsorbent comprises a high surface area alumina with a surface area greater than about 100 m²/g.

Claim 29. (New) The process of Claim 17 wherein the inorganic binder for binding the inorganic adsorbent to the filter substrate is selected from the group consisting of sols of alumina, silica, zirconia, ceria, titania, boehmite and aluminum nitrate, and blends of two or more different binders.

Claim 30. (New) The process of Claim 17 wherein the filter substrate comprises a stainless steel screen and the inorganic binder comprises ceria.